Application No.: 10/020,547 Amendment dated: July 2, 2003 Reply to Office Action of April 10, 2003

## **Amendments to the Specification:**

Please replace the paragraph beginning at page 5, line 13, with the following rewritten paragraph:

-- The present invention also provides a pneumatic tire for use on wheeled vehicles having a component manufactured from a long chain crosslinked elastomeric composition of matter comprising 100 parts by weight of a rubber selected from the group consisting of polybutadiene, styrene-butadiene rubber, synthetic cis-1,4-polyisoprene, synthetic polyisoprene, cis-polybutadiene, butadiene-isoprene rubber, styrene-isoprene rubber, styrene-isoprene butadiene rubber, butyl rubber, neoprene, acrylonitrile-butadiene rubber, natural rubber, EPDM, terminal and backbone functionalized derivatives thereof, and mixtures thereof; from about 1 to about 15 parts by weight of a dimercaptan has having the general formula

H(SCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>S)<sub>n</sub>H

wherein n is 2 to 60; from 0 to 5 parts by weight of sulfur; and from about 0.2 to about 10 parts by weight of at least one accelerator.-

Please replace the paragraph beginning at page 6, line 26, with the following rewritten paragraph:

- - The novel approach for improved rubber abrasion is to introduce long chain crosslinks into the rubber matrix. Conventional rubber compounds consist of effective network chains, which are long sections ( $M_{\pi}$   $M_{n}$  may be approximately 10,000 g/mol on average for example) of single polymer chains between crosslinks. Since crosslinking generally occurs at random sites along a polymer chain, there is a distribution of lengths of the effective elastomer network chains. The crosslinks themselves form attachments between polymer chains to give an interconnected network. In traditional or conventional sulfur or other crosslinking systems, there is a distribution of the number of sulfur atoms, for example, bridging two polymer chains to form a crosslink. Thus, there are mono-sulfidic, disulfidic and poly-sulfidic crosslinks, where



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poly-sulfidic crosslinks may contain up to about eight sulfur atoms. Accordingly, there are two different distributions of lengths in the elastomer network; the distribution of sulfur atoms, or other atoms if the conventional cure system is different from sulfur based, in the individual ucrosslinks, and the distribution of effective elastomeric chains themselves. - -